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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/927,307	08/10/2001	Christopher W. Gabrys		4970

7590 10/24/2002
J. Michael Neary
Neary Law Office
542 SW 298th Street
Federal Way, WA 98023

EXAMINER

LE, DANG D

ART UNIT PAPER NUMBER

2834

DATE MAILED: 10/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/927,307

Applicant(s)

GABRYS, CHRISTOPHER W.

Examiner

Dang D Le

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because at line 9, the word "flywhhee" should be replaced with -- flywheel --. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 4-9, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Henry et al.

Regarding claim 1, Henry et al. show a combination mechanical and magnetic support system for a flywheel power supply for storing and retrieving energy in which said power supply includes a flywheel that spins about an axis of rotation inside an evacuated chamber, an attached motor/generator means is provided for accelerating and decelerating, said flywheel, said combination mechanical and magnetic support for said flywheel comprising:

- At least one rolling element bearing (Figure 7) and at least one magnetic bearing (27) in bearing housings mounted in said chamber providing radial and axial support for said flywheel in said chamber;

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- Wire metal mesh spring dampers (35) between portions of said rolling element bearings and said bearing housings, said spring dampers imparting both radial damping and radial centering stiffness to said flywheel.

Henry et al. do not show:

- Said support system having a radial stiffness that allows a cylindrical rigid body resonance of said flywheel to occur at a speed less 30% of the normal operating speed; and
- Said magnetic bearings supporting at least than 80% of the weight of said flywheel and thereby substantially extending the life the of said rolling element bearings.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the support system with a radial stiffness that allows a cylindrical rigid body resonance of said flywheel to occur at a speed less 30% of the normal operating speed; and to make the magnetic bearings support at least than 80% of the weight of said flywheel and thereby substantially extending the life the of said rolling element bearings for the purpose of increasing life of the device, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 2, it is noted that Henry et al. also show said rolling element bearing being continuously in contact with said flywheel.

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Regarding claim 4, it is noted that Henry et al. also show said rolling element bearings functioning as auxiliary bearings that contact said flywheel only when the radial displacement of said flywheel is excessive.

Regarding claim 5, it is noted that Henry et al. also show said magnetic bearing being actively controlled in five active axes.

Regarding claim 6, it is noted that it would have been obvious to one having ordinary skill in the art at the time the invention was made to make said wire metal mesh from wires with diameter less than 0.100 inches for the purpose of increasing life of the device, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 7, it is noted that it would have been obvious to one having ordinary skill in the art at the time the invention was made to knit said wires of the mesh to form said mesh for the purpose of increasing life of the device, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 8, it is noted that it would have been obvious to one having ordinary skill in the art at the time the invention was made to weave said wires of the mesh to form said mesh for the purpose of increasing life of the device, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

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Regarding claim 9, it is noted that Henry et al. also show said spring damper being able to withstand radial loading over 10,000 lbs without plastic deformation.

Regarding claim 11, it is noted that Henry et al. also show said rolling element bearings including preloaded tandem pair angular contact ball bearing sets.

Regarding claim 12, it is noted that Henry et al. also show said bearing sets using ceramic balls with metal races.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Henry et al. in view of Baermann.

Regarding claim 3, Henry et al. show all of the limitations of the claimed invention except for said magnetic bearing using rare earth magnets to provide lifting force.

Baermann shows said magnetic bearing using rare earth magnets to provide lifting force for the purpose of increasing lifting force.

Since Henry et al. and Baermann are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to include in said magnetic bearing rare earth magnets to provide lifting force as taught by Baermann for the purpose discussed above.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Henry et al. in view of Morreale.

Regarding claim 10, Henry et al. show all of the limitations of the claimed invention except for said rolling element bearings being lubricated using a dry lubricant.

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Morreale shows the rolling element bearings being lubricated using a dry lubricant for the purpose of increasing life.

Since Henry et al. and Morreale are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to add to said rolling element bearings a dry lubricant as taught by Morreale for the purpose discussed above.

Information on How to Contact USPTO

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D Le whose telephone number is (703) 305-0156. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

DDL
October 20, 2002
DL

